

UNITED STATES PATENT OFFICE.

CHARLES B. STILWELL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
THE UNION PAPER BAG MACHINE COMPANY, OF SAME PLACE.

PAPER BAG.

SPECIFICATION forming part of Letters Patent No. 405,616, dated June 18, 1889.

Application filed January 21, 1889. Serial No. 297,033. (No model.)

To all whom it may concern:

Be it known that I, CHARLES B. STILWELL, of the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improved Paper Bag, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to that class of paper bags which may be called "bellows-sided satchel-bottomed bags," such in general character as the bag shown and described in Re-issued Letters Patent No. 10,083, granted to the Union Paper Bag Machine Company April 11, 1882, as the assignee of one Deering; and my object is to so construct such bags that they may have the greatest possible capacity with the least possible consumption of paper, while at the same time the strength and correct proportions of the bag are in no wise impaired.

The method or process of making a paper bag, apart from the instrumentalities employed, is of course the mere making of folds or folds and cuts in the paper, by which folds and cuts the finished bag resulting from the treatment is best described. As with all bags of the kind referred to, the first step is to form a strip of paper into a tube with inwardly-tucked or bellows-folded sides. This is usually done by well-known mechanism acting on long rolls of paper, which, after being folded and pasted into a tube of the proper cross-section, is cut up into bag-blanks. In or before cutting off the blanks any desired slits or lips can of course be formed on its ends, and I make a peculiar novel cut, which, however, can best be described hereinafter. The blanks being formed, the next step is to open up that portion of the tube which is to be formed into the bottom, forming what in satchel-bottomed bags made from untucked tubes is called the "diamond," which name I will hereinafter use to describe this part. This diamond is formed in the usual way, except that in my method I take care that the portion of the blank folded into the diamond shall be (not considering a lip on one edge of the bottom of the blank, and which will be hereinafter described) substantially equal in length to the

breadth of the inwardly-folded or tucked-in sides. As a result of this, the two trapezoidal side folds of the diamond will each have a maximum breadth about equal to one-half of the breadth of the folded-in sides, and from end to end their length will be substantially twice the breadth of said sides. It will be at once understood that the consequence of this construction will be that each of the two final folds by which the bottom is closed and the bag completed will be equal in depth to one-half of the breadth of the folded-in sides of the blank, and as the bottom has of course the same breadth as the folded-in sides these final folds will just about meet without lapping in the center of the bottom. Now if these folds, instead of approximating, exactly corresponded with the dimensions referred to the result would be that the bottom would be just barely closed up, without, however, leaving any room for the necessary paste-seams to hold it together. In order to overcome this difficulty, so far as the securing of the final folds to the edge of the side folds of the diamond is concerned, I make in the bottom of the blank slits, both in the front and back thereof, equidistant from the center line and distant from each other the distance between the two side folds of the diamond plus a distance equal to twice the necessary depth of a pasted seam—say about an inch—as a seam should have a half-inch of paper to receive and hold the paste. The depth of these slits will be the distance from the edge of the paper to the lines of folding of the edges of the diamond. These slits will leave parallel-sided flaps on each end of the diamond, which, when the final folds are made, will lap over the side folds for their entire length and to an extent sufficient to enable a strong pasted seam to be made between them. In order to secure the necessary overlapping of the final folds at the center of the bag, I in cutting the blanks from the tube form on one edge of the portion to be formed into the bottom a projecting flap of a depth sufficient for a pasted seam—say about half an inch—and a breadth which should be about the same as the distance between the slits already referred to, although the exact breadth or form of this